

**WHAT IS CLAIMED IS:**

1. A method of transferring an image recorded on a photographic film to a digital signal by using a film scanning device that generates scan data representative of the digital signal, said method comprising the steps of calibrating the film scanning device in relation to printing densities and scanning the photographic film with the film scanning device to produce scan data that represents printing densities.

2. The method as claimed in claim 1 wherein the digital signal is used to drive a film recorder that exposes an output film that is subsequently printed onto a target print material, said scan data representing printing densities which when written out to the film recorder will produce printing densities of the output film onto the target print material that are identical to the printing densities of the same photographic film optically transferred onto the target print material.

3. A method of transferring an image recorded on a photographic film to a digital signal by using a telecine scanning device that generates code values representative of the digital signal, wherein the telecine scanning device is calibrated in relation to printing densities and the scan data accordingly represents printing densities.

4. The method as claimed in claim 3 wherein the code values are obtained by scanning the photographic film.

5. The method as claimed in claim 3 wherein the photographic film is either a camera negative film or an intermediate film obtained from the camera negative film.

6. The method as claimed in claim 3 wherein the digital signal drives a film recorder that exposes an output film that is subsequently printed onto a target print material, said code values representing printing densities which

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when written out to the film recorder will produce printing densities of the output film onto the target print material that are identical to the printing densities of the same photographic film optically transferred onto the target print material.

7. A method of transferring an image recorded on a photographic film to a digital signal using a telecine scanning device that generates code values representative of the digital signal, wherein the transfer is calibrated to provide an effect equivalent to that of optically exposing the photographic film onto a print material, said method comprising the steps of:

calibrating the telecine with respect to printing density such that the code values represent density values which when written out to an output film will produce printing densities of the output film as subsequently printed onto the print material that are identical to the printing densities of the same photographic film optically transferred onto the print material;

using the calibrated telecine to effect transfer of the photographic film to the digital signal; and

storing the digital signal for subsequent recording on the output film, whereby the stored digital signal as subsequently printed out to the output film will capture substantially the full content of the image densities on the photographic film.

8. A method of calibrating a film scanning device in relation to printing densities of an output film printed onto a target print material, said method comprising the steps of:

measuring a film calibration element with the film scanning device and producing scan measurements therefrom, said film calibration element including an ordered series of neutral exposures representing substantially the full exposure range of a particular film type;

comparing the scan measurements to aim values derived from the film calibration element, said aim values representing printing densities which when written out by a film recorder will produce printing densities of the output film onto the target print material that are identical to the printing densities of the

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same film calibration element optically transferred onto the target print material;  
and

adjusting the film scanning device until the scan measurements  
substantially agree with the aim values.

9. The method as claimed in claim 8 wherein the step of  
adjusting the film scanning device produces one or more telecine setup values and  
the method further comprises the step of saving the setup values.

10. A method of transferring a motion picture film to a digital  
signal by using a telecine scanning device that generates scan data representative  
of the digital signal, said method comprising the steps of calibrating the telecine  
scanning device in relation to printing densities and then continuously scanning  
the motion picture film with the telecine scanning device to produce scan data that  
represents printing densities, whereby the transfer occurs continuously without  
interruption for scene-to-scene- color grading.

11. The method as claimed in claim 10 wherein the digital  
signal is used to drive a motion picture film recorder that exposes an output  
motion picture film that is subsequently printed onto a target motion picture print  
material, said scan data representing printing densities which when written out to  
the motion picture film recorder will produce printing densities of the output  
motion picture film onto the target motion picture print material that are identical  
to the printing densities of the same motion picture film optically transferred onto  
the target motion picture print material.

12. The method as claimed in claim 10 further comprising the  
steps of storing the scan data and subsequently color grading the scan data as  
required.

13. In a system for transferring an image recorded on a  
photographic film to a digital signal using a film scanning device and

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subsequently writing the digital signals onto an output film that is printed onto a print material, the improvement wherein the film scanning device is calibrated to provide an effect equivalent to that of optically exposing the photographic film onto a print material, said system comprising:

a calibration element including an ordered series of neutral density exposures representing substantially the full exposure range of a particular film type;

a digital processing stage utilizing the calibration element for calibrating the film scanning device with respect to aim values representing printing densities and generated calibrated scan settings therefrom, wherein code values subsequently produced by the film scanning device will represent density values which when written out to the output film will produce printing densities of the output film as subsequently printed onto the print material that are identical to the printing densities of the same photographic film optically transferred onto the print material; and

a film scanning stage using the calibrated settings to effect transfer of the photographic film to the digital signal.

14. The system as claimed in claim 13 further comprising a storage device for storing the digital signal.

15. The system as claimed in claim 14 wherein the stored digital signal is used for subsequent recording on the output film, whereby the stored digital signal as subsequently printed out to the output film will capture substantially the full content of the image densities on the photographic film.

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